Armenia, land of contrasts… and untapped potential!

At the crossroads of Europe and Asia, Armenia's rich history and traditions somehow overshadow a vibrant (yet untapped) youth culture and tech scene, Policy Support Facility (PSF) experts discovered during a year-long investigation. Their findings point to concrete actions and a timetable for reforming the country's research and higher education ecosystem.

Armenia is a land of contrasts. Located in the Caucasus region, it is dominated by snow-capped mountains and blessed with fertile plains producing apricots and grapes for award-winning brandy. It is a land of ancient monasteries and manuscripts, stunning landscapes and rich cultural heritage; all drivers of a fast-growing tourism sector and earning Armenia its title as one of Europe's "best kept secrets". The capital Yerevan and cities such as Gyumri also play host to a vibrant digital start-up scene attracting young people nation-wide to learn cutting-edge skills in the TUMO-Centre for Creative Technologies. But there is more to Armenia than meets the eye.

"Like many countries moving away from a centrally planned economy, Armenia suffers from structural barriers between knowledge-creation and its local diffusion," explains Luc Soete, Board Member of United Nations University Research and Training Institute, who Chaired the PSF study.

Major efforts are needed, he continues, to restructure and upgrade the country's fragmented research and higher education system. "This means agreeing a common vision on the way Armenian science and higher education can best contribute to the country's economic development, rather than being primarily a source for the world to benefit from Armenian talent."

Recognising the importance of science as an 'applied' problem-solving activity with the potential to exploit many, sometimes low-hanging innovative opportunities is just one priority among the 19 PSF recommendations he and the expert panel presented to the Government.

Armenia is classed as an 'upper-middle income economy' and, driven by the mining, manufacturing and service sectors (especially IT), it has achieved relatively high economic growth since 2016. It also ranks well internationally for ease of doing business. Yet, a quarter of the population lives below the national poverty line, toiling in low-skilled jobs (mostly agriculture). Around half have no professional (post-secondary school) education, and brain-drain and skills-flight are pressing issues to address.

Tackling the fragmented research institution landscape

Armenia's research and higher education system urgently needs to restructure and upgrade its 80-plus research institutes. A fragmented public research sector is compounded by weak links with higher education and the economy. Universities are seen largely as 'teaching' centres with little business involvement in R&D or contracted research work.

Reconfiguring a deep-rooted system of research and higher education requires great "political will and smart investments combined with rules that foster development", notes Agrita Kiopa, Vice-Rector for Research at Riga Stradins University. Together with fellow peer experts and rapporteur, Alasdair Reid, she responded to a request from the Armenian Minister of Education, Science, Culture and Sport for an evaluation of its publicly-funded research institutions, and how to reshape the future funding system based on performance. Measures to bridge the gap between higher education and research systems were also requested.

Drawing on the experience of similar-sized economies that also went through economic transitions, and based on a background report and extensive consultations during two missions to Yerevan (May and October 2019), the PSF team drew up **three key policy messages aimed at the Armenian Government**:

1. Government R&D funding as a share of GDP should be increased or the Armenian science system's capacity to retain qualified young researchers and produce high-quality research and innovations will further decline.

2. The higher education and research institute landscape requires consolidation, not hasty restructuring. A rapid merger of research institutes into universities risks weakening performance given the lack of strategic agendas and limited R&D management capacities in HEIs.

3. In evaluating research institutes and allocating future funding, a balance should be struck between research that has an international impact and research that is locally relevant and contributes to national social and economic development.

The expert's **19 recommendations** were grouped under four main headings:

Necessary conditions for a successful reform: Consolidate higher education into a limited number of research-based universities, promote better governance of R&I policy, design and implementation, and a new role for the National Academy of Science as a 'learned society'; and boost Government expenditure on R&D as a share of GDP by 2025 with additional budget (2021-2025) partly funded by the EU.

Implementing an evaluation of research capabilities and performance: Launch in 2020-21 a nation-wide research evaluation covering all types of research institutes, prioritising conditions for carrying out high-quality research relevant to Armenian development (rather than on research outputs per se).

Boosting higher education and research cooperation: Six key measures include an updated 'vision for the role of science in society', a research infrastructure roadmap, promoting 'open access' to research equipment and data, scaled up pilot initiatives for inter-university doctoral schools, specific financial measures and reforms to early-stage researcher employment conditions, and a competitive call for a limited number of inter-institutional centres of excellence for basic research and competence centres for applied research.

Moving to performance-based research funding: Aim towards a more functional and effective funding system combining direct appropriations (baseline funding) and performance-based research funding, which should be set at 20% of institutional funding.

"Here, the Latvian example suggests that mergers of institutions are possible if the right incentives are in place and adequately supported," notes Kiopa, explaining how her government rated institutions on their performance evaluations and encouraged 'voluntarily mergers' over a defined time period.

"The government allocated funds for developing new programmes to align research with the strategic goals of the country and introduced competitive research funding programmes complying with international standards of peer-review for project evaluation," she explains.

The combination of performance-based institutional funding and competitive funding is a precondition of healthy research system, she adds. "Therefore, the balance between the two should be maintained as Armenia moves forward with the reforms."

Next steps?

"The PSF report is a comprehensive tool with useful recommendations to develop Armenia's strategy for optimising its infrastructure and shaping better policies for the R&D environment," concluded Sargis Hayotsyan of the Ministry's Science Committee.

With a strategy in place, and implemented as from 2020, the country will be able to reorient R&I towards national development, global recognition and meaningful socio-economic outcomes, helping to reach its full potential.

For further information:

The Final Report of the PSF Specific Support to Armenia

The Final Report in Armenian of the PSF Specific Support to Armenia

The PSF Specific Support to Armenia

Seeking to improve the design, implementation and evaluation of research and innovation policies, the PSF provides expertise and practical support to Member States in a number of ways: Peer Reviews of national R&I systems, Specific Support to policy reforms, and project-based Mutual Learning Exercises to improve policymaking and implementation.